

# AMATEUR RADIO



Published in the interests of Amateur Radio  
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## EDITORIAL . .

### CAIRO, 1938?



How many amateurs have given any serious thought to the outcome of the International Telecommunications Convention which is to be held at Cairo in 1938?

Previous Conventions have shown only too well that commercial interests, with their unlimited financial backing, can secure any portion of the spectrum that they desire, while the amateurs, who have pioneered all frequencies above 1500 K.C., with no thought of personal gain to themselves, have to put up with those frequencies that we were barely able to wrest from the commercials and those frequencies that commercial interests considered unsuitable for long distance communication.

In the first instance, the amateurs were given those frequencies above 1500 K.C., it being considered then that these frequencies were unsuited to reliable communication over long distances, and commercial interests did not desire to conduct any research into the possibilities of these frequencies.

After continued experiments the amateurs showed that these shorter wavelengths were most suited to long distance communication. In 1924, contact between Australia and the United States of America was first established on a wavelength of 80 metres. Almost simultaneously, amateurs in other parts of the world established contact over hitherto impossible distances.

Similarly, it was proved that other frequencies, namely, those between 7000 and 10,000 K.C. were equally

as valuable—and with what result—commercial interests, who had done none of the pioneering work, chiselled the amateurs out of the territory which should have been theirs by right. This “pirating” of frequencies has continued until now over 50,000 amateurs throughout the world are crowded into wavebands totally inadequate for a fraction of that number.

If commercial interests made full use of all the frequencies allotted them, and they could prove that such huge frequency allocations were essential to the efficient operation of their services, then the amateurs would have no kick coming, but they cannot prove that they require all the frequencies that they are now permitted to use. Many commercial stations spend hours on end merely sending the test sign V—this has apparently deluded the authorities into believing that they are making full use of their frequencies.

The I.A.R.U., with which the W.I.A. is affiliated, is being represented at Cairo, and data is required on the operation of these stations. The W.I.A. is organising listening groups, similar to those formed and being formed in all other amateur societies throughout the world, to get accurate logs of all commercial stations operating on frequencies adjacent to our bands, in order to illustrate the exact use the commercial stations are making of these frequencies.

We need, in fact, we must have, more territory, and the surest way  
(Continued on page 7.)

# Notes on the 6E5 (Magic Eye) Tube

SOME PRACTICAL INFORMATION OF USE TO HAMS.

(By Denys R. Ayre.)

A good many Hams, when they *do* sleep, which is seldom, have been known to dream rosy dreams of Cathode Ray Tubes, and all their luxuries in the way of instantaneous circuit condition readings. Alas, however, the average Ham is not a millionaire! So his dreams fade, and he returns to earth and to moving coil or moving iron meters.

It is well known that all meters (except the better class of moving coil types) will, on the sudden application of a current or voltage, jump well past the scale reading of the actual value, and then return to the correct reading with a number of oscillations inversely proportional to the cost of the meter. This is of no great disadvantage if the current or voltage is constant. But if the input is rapidly varying, and it is desired to follow the variations, one has as much hope of doing it satisfactorily with an ordinary motor as one has of putting D.X. signals on Venus. Hi!

The chief reason for the unsuitability of this type of indicator lies in the weight of the pointer and associated moving mechanism. The input to a meter causes the arm to move. A body in motion possesses *momentum*. This momentum carries the needle past its correct value. The reaction then sends the pointer below its correct value. As mentioned before, the number of swings before it comes to rest depends on the quality of the meter (or the "damping").

With a varying input, the needle would not have finished the first oscillation before the input changed. Thus only part of a complete movement would take place, and it would not be of much use in forming an estimate of the current that caused it. (The writer is aware that meters of a type and quality suited to varying inputs *are* obtainable, but they will be found, for the most part, to cost nearly as much as a full-sized Cathode Ray

Tube. "Meter," in this article, may be taken to mean an ordinary ammeter or voltmeter.)

Most of you who read this will have heard of the new 6E5 ("Magic Eye") tube. The 6E5 is virtually a Cathode Ray Tube. Admittedly it is small. Also, it does not produce the fine "spot" or focussed beam of its big brother. It has, however, two advantages over even expensive moving coil meters. It possesses a movement or indicator with no weight at all, and it costs about 16/- retail.

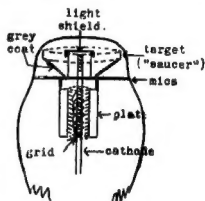


FIG. 1.

In appearance, the 6E5 is like any other valve; in internal construction, it is totally different. The chief feature of its design is a concave metal "saucer" situated in the top dome of the glass envelope, and coated with a grey fluorescent layer. (See Fig. 1.) In the centre of the saucer is a hot Cathode, shielded from outside light sources by a small black metal cap. Underneath, in the body of the valve, are a continuation of the Cathode, a Triode plate and a Triode grid. (The control grid.)

The theoretical diagram and basic circuit are shown in Fig. 2. The tube normally operates with plate and heater voltages of 250 and 6.3 respectively. The one megohm resistor shown in the figure should normally always be included.

In brief, the effect of the tube is obtained by viewing it from above. When the plate and heater voltages are applied, however, the saucer-shaped target glows a bright green. There is, however, a wedge of darkness, which varies in size according to the voltages applied to the control grid.

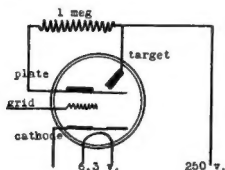


FIG. 2

When the grid is -8 volts with respect to the Cathode, the shadow-angle is approximately 0 degrees. (Fig. 3.) When the grid is at 0 the angle is approximately 90 degrees. (Fig. 4.) When the grid is negative to a further degree than -8, the shadow-angle is not only at zero, but the two edges of the green arch overlap, forming a small angle of a slightly brighter green. (Fig. 5.)

It might be advisable to note here a few facts that came to light in the course of some experiments with the tube.



FIG. 3



FIG. 4



FIG. 5



FIG. 6

- (a) Positive grid voltages do not increase the shadow-angle anything like the extent that negative voltages decrease it.
- (b) The tube is normally operated with a 1 meg. resistor between plate and target. However, increasing this resistor results in a slight increase in shadow-angle, while decreasing the resistor results in a slight decrease in angle. The colour seems to be unchanged.

These changes in shadow-angle take place at exactly the same rate as the changes in input. If the input alters instantaneously, then the corresponding change in angle takes place instantaneously. There is no time lag.

The normal use of this tube is as a visual tuning indicator driven by the A.V.C. voltage in Supers. This voltage is D.C. If an A.C. voltage is applied, however, a variation of practical use is still obtained, for the following reason. As pointed out previously, positive grid inputs to the 6E5 produce very little change in angle. Therefore, the negative half of the cycle produces an arc slightly lighter in colour than the main green arc, the limits of which main green arc are still visible as the zero value of the A.C. cycle. (See Fig. 6.)

This enables audio voltages to be fed into the tube with a visible effect.

A practical application of this is in speech amplifiers. It is well known that, if the gain control of a speech amp. is advanced too far, over-modulation may occur through sheer volume. It is not practicable to have a loud-speaker monitor in operation at the same time as the microphone, and no decent check up can be obtained through head-phones.

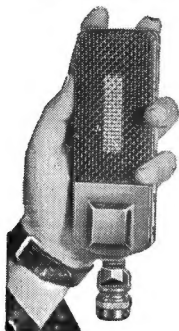
Insertion of a 6E5 is a great help here. The most satisfactory method of coupling the 6E5 to an audio amplifier that the writer has found so far is indicated in Fig. 7. The tube was

connected, by means of a potentiometer, in the output circuit of a 245 Triode, which was feeding a small loud-speaker for test purposes. The high value (1 meg.) of the potentiometer does not affect the impedance matching of the valve and its load. It is advisable to use a potentiometer of good quality, in order that the resistance may decrease gradually to zero—not fall from about 30,000 ohms. to 0 suddenly, as is usually the case with cheap potentiometers.

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(Continued from Page 3)

The amplifier is operated at the maximum permissible volume before distortion or over-modulation sets in, and the potentiometer adjusted until the two varying arcs just touch on loud passages. Any further increase in volume will then cause the arcs to cross. It might be thought that the amplitude would vary too rapidly to be seen, but in reality the space between the arcs is easier to see the nearer they get together.

This 6E5 could also be used to advantage in the output circuit of a Monitor.

No doubt many other uses will suggest themselves.

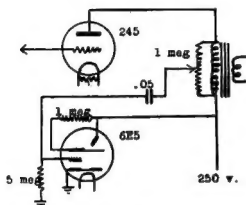


FIG. 7

The mechanical installation of the 6E5 should be effected in such a manner as to keep the target reasonably shielded from outside light sources, in order that the angle may be readily observed.

The writer is at present investigating the possibility of indicating percentage modulation by means of the 6E5. Should anything of practical value come to light, it should prove of great use to 'phone Hams.

for us not only to forego our claims for the additions we need, but also to stand the right way to lose what we now possess, is for every amateur to leave this job of collecting data to someone else.

The W.I.A., along with all other affiliated bodies of the I.A.R.U., will be contributing towards the cost of sending a representative to the Convention, and we must see that he goes armed with overwhelming information in support of our claims.

The Australian Government will also be represented at the Convention, and it is the intention of the W.I.A. to present a petition to it along the lines of the one already presented to the New Zealand Government by the N.Z.A.R.T., and to ask that the Australian representative be instructed to support the amateur proposals.

This is one of those rare occasions when there is a job of work to be done in YOUR Institute when the results will hit you as hard as anyone else if you do not do your share. Sometimes a "leave it to James" attitude only affects you in an indirect way, but this is a matter of such tremendous importance that a supreme effort by everyone is essential.

The information concerning the data required will be given in an early issue—the rest we leave to you!

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For ease of construction, simplicity of control and reliability of operation, we particularly recommend a super-regenerative circuit developed by Mr. George W. Shuart (W2AMN), of Ramsey, N.J. This circuit may be used on either 2½ or 5 metres, depending on the size of the tuning coil.

The electron-coupling arrangement of the detector circuit permits the use of a grounded tuning condenser and a single tapped coil, one end of which is also grounded. The advantages and convenience of this scheme will be appreciated by every "Ham" who has tried the usual split-coil hook-up which requires a "floating" condenser.

### LEAK CONTROLS "SUPER" ACTION.

Super-regenerative action is produced by the grid-leak connected between the grid and the plate of the detector tube. While its value is not very critical and three megohms has been chosen as the optimum, different tubes may require slightly different resistor values, and it will pay the constructor to do a little experimenting at this point. The higher the value of the leak the lower the audio output of the detector, but the greater the sensitivity and vice-versa.

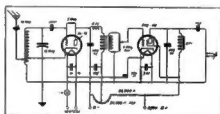
For five-metre work the coil consists of seven turns of No. 12 bare copper wire (tinned bus bar is excellent), wound around a form a half-inch in diameter, and then slipped off. The spacing between turns should be one-sixteenth of an inch. The Cathode tap is two to four turns from the grounded end, depending upon the particular tube being used.

The antenna tap is a matter of experiment, but as a starter it should be made to the Cathode connection of the coil.

For two and a half metres the coil consists of four turns of No. 12 wire, wound in the same manner as the larger coil.

### CHOICE OF TUBES.

The detector may be either a 56 or a 76, the audio amplifier a 2A5 or a 42. The 76-42 combination is recommended since the heaters work on 6.3 volts, and the finished receiver may be used with only a slight chance on either A.C., with a separate power



pack, or on batteries for mobile operation. There is no appreciable difference between the two types of tubes in the results obtained, the choice between them depending on the available power supply and the probability of the set seeing portable service. It is a good idea to try more than one detector tube of the same type number. Some tubes are noticeably better super-regenerators than others, and give much better all-round results. Different leaks should also be tried.

Note that a volume control in the form of a potentiometer across the A.F. transformer secondary is used independently of the regeneration control in the plate circuit of the detector.

### HISS DISAPPEARS DURING RECEPTION.

In operation this receiver will produce a strong hiss, which will drop in intensity considerably or disappear altogether when a station is tuned in.

The .005 mf. fixed condenser between the plate of the output tube and ground will help to reduce the noise.

At K2AMN, W2AMJ and other stations this receiver is used almost exclusively with a magnetic loud-speaker, because it has plenty of "hop." It lends itself nicely to duplex operation because of the complete shielding. Almost any kind of antenna will work, although, of course, the best results will be obtained with a half-wave vertical antenna, as high and clear as possible.

The case measures only  $8\frac{1}{2}$  by  $6\frac{1}{2}$  by  $5\frac{1}{8}$  inches. It is constructed in two sections, which separate to allow easy assembly of the receiver. It is ideal for portable and mobile use, because it is compact and light in weight.

In and around New York, northern New Jersey and the Yonkers region, where five-metre activity is particularly pronounced at the present time, this receiver is very popular and has replaced many three-tube sets which use a separate low-frequency oscillator to obtain super-regeneration.

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The editorial committee desires to express its appreciation of those contributors who send in "small articles." These are generally accompanied by a rather humble and apologetic note from the author hoping they won't be considered presumptuous. Believe it or not, we think "little fish are sweet." Many thanks.—Editor.

## Books Reviewed

(By the Technical Editor.)

The 1936 "Radio Handbook," which has just arrived, is one of outstanding value to the amateur. The 360 pages of its contents are crammed with solid "dope" of all description, and it would be hard to find a phase of amateur radio not covered therein. Most of the constructional articles are compiled from recent issues of "Radio," and consist of the very latest in transmitters and receivers of one to ten or more tube designs. Chapters covering the following sections are to be found:—Fundamentals and vacuum tube theory, 25 pages; 38 pages on receiver design and construction, including crystal filters, testing and measuring of performances, Faraday shields, etc. Pages 79 to 242 cover the many fields of transmission, C.W. tone, controlled carrier and otherwise and UHF outfits. Twenty-six pages follow on with sound antenna dope, and the last technical section deals with power supplies. McGill's Agency, of Elizabeth-street, Melbourne, are the suppliers of this excellent handbook, for the sum of 7/6, plus 6d. postage.

## MATHEMATICS OF RADIO SIMPLIFIED BY THE A.R.R.L.

This sounds more like the title of a series of books written by some well-known professor of mathematics as an attempt to bring this art down to within the reach of the average amateur. However, it is not. It is something more simple than this. Following on the success of the A.R.R.L. Lightning Calculator, for inductance and capacity combinations, the A.R.R.L. has published four more calculators of the lightning variety for the following:—

Parallel Resistance and Series Capacity.  
Unknown Resistance Calculator.  
Wire Calculator.  
Decibel Calculator.

Gone are the days of the pages of figures, and even the slide rule, with the advent of these handy calculators. Valued by McGill's Agency at 4/- each, with 2d. for postage, they may be had from the recently-imported stocks.

# Modulation, Depth and Fading

## IMPROVING D.X. 'PHONE.

By E. H. Cox (VK3BD).

How deeply should an amateur 'phone station be modulated? Considerations of economy, and also ambition, say 100 per cent. Prudence says some level about 90 per cent., because at this level the danger of overmodulation, with its resulting repercussions on broadcast-listening interests, then disappears.

Recent experience indicates that for D.X. purposes on the high frequencies the modulation percentage should be considerably less than 100 per cent., and that a level of about 70 per cent. represents a reasonable compromise between the requirements of economical use of gear and the considerations, now to be indicated, which make very deep modulation undesirable.

The distortion due to selective fading is very familiar. Now that international 'phone working on the 14 m.c. band has become commonplace, most 14 m.c. 'phone men are encountering its distressing effects whenever conditions go a little off the perk. Distortion due to this form of fading is immensely more serious on the 28 m.c. band, and it may often render large parts of a transmission unintelligible, even though the minimum signal level is always more than adequate for good reception. Such cases genuinely arise from the fact that the frequency band affected by a fade at any instant on any signal at a given receiver is small compared with the frequency band occupied by the carrier and the side bands of a wireless telephone transmitter. For instance, if the fade affects the centre of the channel in use, the carrier frequency will fall in intensity or disappear completely, leaving the two side bands unaffected. The effect in the receiver is that of a spectacularly overmodulated signal, which quickly becomes unintelligible. If the fade affects the carrier frequency and the upper side band only, the effect is even more disastrous on intelligibility. By removing these frequencies and

leaving the lower side band unimpaired the fade "inverts" the modulation broadly in the way it is "inverted" in the secrecy filters of the commercial telephone services. If the upper side band only, but not the carrier, faded, this inversion effect would not occur, and though showing considerable distortion the transmission would in most cases retain its intelligibility.

The important point to be noted in both illustrations is that it is the loss of the carrier frequency which is so disastrous to intelligibility. It follows as a simple corollary that, if the carrier can be prevented from fading completely, distortion due to selective fading can be minimised. The simplest way for the amateur to effect this cure is to give the carrier plenty of scope for fading, while still retaining a respectable amplitude in comparison with the amplitude of the side band frequencies, or, in other words, by making the amplitude of the carrier initially large compared with that of the side bands. Such a condition is merely a left-handed sort of picture of a carrier modulated considerably less than 100 per cent. It is true that, when the total unmodulated input which may be applied to the final power amplifier is limited, a loss in absolute signal level for voice transmission follows failure to capitalise the whole of the power available by 99 per cent. modulation.

Effective transmission, however, is not governed wholly by absolute signal strength, and under unfavourable D.X. transmission conditions on the high frequencies the loss of absolute level will generally be more than compensated by the minimised distortion when the modulation level is held down to about 70 per cent.

# German DASD Jubilee D.X. Contest, 1936

## RULES AND LOG.

(By D4BUF, Contest Manager,  
DASD).

The ten years' existence of the DASD and the arrangement of the XII. Olympiade by Germany causes the DASD to arrange its first D.X. Contest.

The idea of the contest is to contact as many amateur stations as possible. To guarantee a true logging, six cypher serial numbers have to be exchanged. To be eligible for an award, send completed the official log, a sample of which is printed herewith. (†)

### THE RULES OF THE CONTEST.

**TIME.**—The contest takes place during the five week-ends of August, 1936, from 0000 GMT, Saturday, and running to 2400 GMT, Sunday.

**FREQUENCY BANDS.**—All frequency bands permitted for amateur traffic may be used. The German amateurs have no licence for 1.75 and 56 m.c.

### CONTEST TRAFFIC.

(1) **CONTEST QSO.**—The idea of the contest is to arrange a maximal number of contacts between amateurs of Europe, Germany included, and oversea amateurs. Such contacts, which form one part of the contest, are named "Contest QSO's."

The call for such contacts has to be:—CQ, DJDC de . . . where DJDC is an abbreviation for "Deutscher Jubiläums D.X. Contest." An oversea amateur who wishes to work Germany directly may call CQ D de . . . German amateurs call likewise CQ DJDC de D . . .

In every contact between the participating stations the reception report and a six-cypher serial number similar to those in previous con-

tests have to be exchanged. (\*) Contest QSO's may take place only once between same stations during each week-end and on each amateur band.

### (2) REPORT- (QTC-) TRAFFIC.

The DASD, as sponsor of the contest, wishes to learn as soon as possible what contest QSO have been worked by amateurs outside Germany. Therefore report- (QTC-) traffic has been arranged. QTC contacts are between stations outside Germany — oversea as well as European — and German amateurs. The station outside Germany sends as many reports to its German partner as it has worked Contest QSO's apropos the contest. The German station only confirms the reception of the reports. In QTC no individual serial numbers are exchanged between stations; the contacts are not handled as Contest QSO. The call for QTC traffic has to be: CQ D QTC de . . . German stations which wish to work QTC traffic call QTC de D . . .

Each individual Contest QSO can be reported to Germany only once. During each QTC QSO, however, as many reports may be sent to the German station just worked as are available. QTC traffic may be arranged with any D station as often as it is liked during same week-end. Regular traffic times may be stipulated.

Each QTC report must have a Contest QSO Europe Oversea as origin. It is not a rule, but we hope that each participant outside Germany will report all Contest QSO to Germany. This may be difficult for certain oversea stations.

(†) There are no entrance formalities; just send the DASD your completed log.

# Amateur Radio

(\*) Serial numbers: Six cypher groups; first three choose as you like; they are unchanged during whole contest. Add three zero for group of first QSO. In the following QSO'S add to the first three cyphers of your own the first three of the serial number you have received in last contact.

The reports shall be transmitted by the foreign station to the German ham in the following manner:—

According to above, W 8 HD has worked at any day of the contest G 6 CL at 0935 EST. He got from G6 CL the serial number 123 456. The same scheme is used for the other reports. The German station D 4 BIU acknowledges the correct reception by 3 QTC OK +. In the same manner foreign European stations report to Germany about their contacts with oversea hams.



## LOG DASD Jubilee DX-Contest 1936

A contest apropos of the Olympiade in Germany and  
the tenth anniversary of the DASD

„DJDC“

Final score:

points

Prefix:

Call:

Name, Address:

Input:

RX:

German Districts worked:

Date	Stn wkd	W. R. T.		Time local	Serial number		Distance 1000 km	points claimed	In QTC were reported the contacts with:
		Sent	recd		sent	received			
9. 6. 36	G 6 CL	509	576	0935	987 664	123 456	5	5	Examples G 6 CL 0935/123456 F 8 RJ 1245/43267 CT1 AH 2356/987345
"	F 8 RJ	436	568	1245	987 123	432 678	6	6	
"	CT1 AH	467	356	2356	987 432	987 345	6	36	
15. 6. 36	D 4 BIU	—	—	1500	QTC	—	6	36	

1) Nr. of wkd German Districts:

2) Sum of points

Final score (1) × (2) =

I state that I have abided by the rules of the Contest and that my final score is correct.

73

Signature

Call of the station worked in the reported Contest QSO, local time of QSO, serial number received from the worked station.

Example: W 8 HD may have to transmit three reports, which originate from Contest QSO'S with G 6 CL, F 8 RJ and CT 1 AH. (He may have got in contact with D 4 BIU by CQ D QTC de W 8 HD.)

D 4 BIU de W8HD = HR QTC =  
 G 6 CL 0935/123 456. =  
 F 8 RJ 1245/432 678 =  
 CT 1 AH 2356/987 345 = OK  
 ? +

We summarise once more: At times when oversea amateurs find conditions good for working with Germany they report their whole traffic worked with European stations outside of Germany in form of QTC to Germany. Those European stations which just have no possibility of contacting oversea, but are able to reach Germany anyway, report at such time to Germany what Contest QSO'S they worked before. It is suggested to use low frequency bands in the latter case.

## • • SUPPORT YOUR ADVERTISERS

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(3) SCORING.—The scoring of the Contest QSO'S, as well as QTC Traffic, is done by points. There are for Contest QSO'S between—

Germany and Oversea — Four points for each 1,000 km. between capitals of contacting countries.

Europe and Oversea—One point for each 1,000 km. between capitals of contacting countries.

For each report during any QTC contact—

Europe-Germany, QTC, 12 points each report.

Oversea-Germany, QTC, 6 points each report, multiplied by each 1,000 km. distance between capitals.

The sum of all points, multiplied by the number of German districts worked in QTC or Contest QSO'S give the final score. There are 19 German districts. See the last letter of German calls: a, b, c, d, f, g, h, i, j, k, l, m, n, o, p, r, t, u, v (i.e., D 4 BAF, D 4 ARR, D 4 BIU, D 4 KPJ, etc.).

(4) AWARDS.—There is no world winner, the amateurs of each country competing among themselves. Regardless of their result, all participants get an artistic Verification Card of their co-operation

in the German Jubilee D.X. Contest, 1936, and the issue of the magazine "CQ-MB," in which the results are published. The competitors of each country with the highest score get an artistic diploma. If there are more than five competitors in one country three awards are given. (In U.S.A. and Canada, as well as Australia, each district is counted as a "country.")

The participant is the amateur, not the station. If more than one amateur worked at same station, each must have a log of his own.

(5) LOG.—All contacts claimed for scoring must be entered in a log, which shall be similar to the official one. It has to show: Date, time, frequency band and worked station of each Contest QSO, report and serial number sent and received. For QTC Traffic there must be entered: Call of the German station which received the reports, what and how many reports, date, time and frequency band. At the top of the log, the name and address of the competitor, his input and final score must be given.

The log must be in possession of the DASD HQ not later than November 30, 1936.

Address of the DASD is: Deutscher Amateur Sende Dienst Contest Manager, Berlin - Dahlem, Schweinfurthstr, 78, Germany.

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## Act Quickly!

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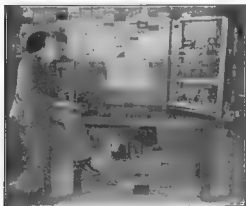
## Station Description

(By VK3EG.)

Owned and operated by L. V. Miller, the station is located at Tallangatta, in North-Eastern Victoria.

Although first licensed in November, 1933, the writer has been operating ham stations since 1925. Studies prevented earlier participation, and it was not until becoming established at Quirindi that associations with VK2HC and John of 2XQ made a ticket become an essential. A crystal rig, with a pair of 210's final, was built, and operated under the call VK2EG until the present outfit materialised.

A certain amount of QRA changing went on before the present location became definite, and it is now in a decidedly good position on a hill which



overlooks the town. The shack is a deserted reservoir; concrete walls of two feet thickness, and isolated from all prevalent forms of QRM, BCL and otherwise. Photos show the view from the shack looking towards Yankee Land, in the direction of Mt. Kosciuszko.

An abundance of cleared area, with convenient pine trees, give wonderful scope for antennae, and this has provided the main source of interest and experiment ever since.

During the VK/ZL Contest three antennae were used—the first a "V" type beam; each wire 330 feet long, for W/VE on 7 mms., fed with a

quarter-wave stub matched to 600 ohm. line. The second, used for South Africa, is a single wire, 330 feet flat top, falling from 90 feet to 50 feet at the fed end. This points north-east and south-west, and making use of the radiation off the ends, proved excellent for ZS, VQ and Alaska. Lastly, the 132 feet North-West Zepp, a quarter-wave off the ground, is used for all 14 mcs. work.

Although the location is ideal for 40 metres, numerous Europeans being worked on the former band, the behaviour on 20 m.x. is probably not all that it might be, and contacts with Europe over U.S.A. can only be had with difficulty, and then only when conditions are particularly good. Other directions seem to be more satisfactory, however, and make up for the peculiarity in that direction to some extent.

The rig itself is crystal controlled, built bread-board fashion, and five frequencies are available. The oscillator is a 46 type, driving a 46 doubler on 7 mcs., followed by parallel 210's, 301's, and a 203A graphite anode final

Separate power supplies are used for the various stages, using 82 rectifiers throughout, with a pair of 866A's for the final.

Telefunken method of modulation is used. The 201A modulator is seen beneath the desk; a two-stage speech amp. is used in conjunction with it.

The receiver is all D.C. operated, using A442 detector and two audio.

In all, 113 countries have been contacted, and regular skeds are kept with Empire link stations, in conjunction with the conducting of BERU affairs in Australia.



# Federal and Victorian Q.S.L. Bureau

By VK3RJ (Federal QSL Manager).



J. P. Bird, of 176 Osborne-street, Williamstown, Victoria, desires to state that he will pay the surcharge on all insufficiently-stamped letters recently sent out by him.

Jack Murden (VK3TY), who recently joined the Air Force, is now located at the Western Junction Aerodrome, Tasmania, where he signs VK7TY.

Hams who were unable to obtain copies of February "QST" are advised that further supplies of this number have been ordered by McGill's News-agency, Elizabeth-street, Melbourne, and supplies should be to hand when these notes appear in print.

Our deepest sympathy is extended to Tom Lelliott (VK3ZW) in his recent sad bereavement.

We welcome to the ranks of short-wave listeners Miss Buxar Rowe, of 63 Grange-road, Toorak. We hope Miss Rowe will shortly join the ranks of the transmitters.

Jack Anderson (VK3JA) recently moved from Warrnambool, Victoria, to Nullawarre, Victoria, where power mains do not exist. He hopes to be on the air again shortly with Batts or a dynamotor. In the meantime his call sign is being used by a "pirate," who may have his cards on personal application to 3JA.

The first batch of cards from HJ3AJH recently reached this bureau. Further batches are expected, so W.A.C. aspirants should take fresh hope.

"Utopia's" D.X. Contest, for Melbourne hams, held on 26th April, proved highly entertaining; but, unfortunately, "Utopia" chose a poor day both for 14 and 28 m.c. D.X. The 10-metre section was annexed by the invincible VK3YP. The prize for this section was an article "worth a guinea a box," and should stimulate us to greater "efforts" in the near future. The 14 m.c. section was won by our handsome Alan Brown (VK3CX), whose prize was a crystal donated by VK3MR. "Snow" had no use for the crystal, as it refused to add the customary extra dots.

From our contemporary, "QSO," the journal of the International Radio Association of China:—"A BCL cut XU80G's ant. four times, so he had to put up steel poles so that they might not be sawed off, as were the bamboo ones previously used." Truly an international problem. Hi!

Speaking of ants, painfully reminds me that the skyline at this QRA is much clearer. Arrived home recently to view the spectacle of a wrecked mast, not to mention the broken clothes lines and fences. "Twas but the wind."

Cards are on hand at the bureau, 23 Landale-street, Box Hill, for the undermentioned VK3's:—AC, AD, AN, AP, AT, BL, DS, DQ, EF, ER, EW, EO, FB, FN, FQ, FW, GF, GJ, GM, GP, GV, GW, GY, HE, HJ, JA, JW, KA, KG, KO, KV, KY, LS, MX, NA, NG, NT, OI, OP, PA, PC, PH, PL, PS, QJ, QR, QY, RE, RM, RW, RZ, SB, TE, TG, TZ, UJ, VK, WH, WN, WP, WZ, XA, XU, YD, YL, ZB, ZK, ZF, ZL, ZW, ZX, Nye, Dinan, Sebire, Grimwood, Hammond.

## 28 and 56 M.C. Section

(By VK3JJ.)

A gradual falling off in D.X. conditions on the 28 m.c. band is now being noticed, and most parts of the world are getting much harder to contact. Africa still seems to be fairly easy, and the best of their stations—ZS1H, ZE1JJ and ZU6P—continue to work many VK's. ZU6P is only using a pair of 46's in the P.A., and often uses 'phone. He recently had a long two-way 'phone QSO with VK3BQ. FB8AB appears to be a very hard station to raise, although his signals often reach a strength of R7/8.

American stations are getting much weaker now and are becoming very hard to work, only the higher-powered VK's apparently getting across. Europeans are seldom heard, but occasionally an odd OH or OK will reach R3 between 5 and 6 p.m. Very few contacts have been made between the East Coast VK and Europe during the past few weeks.

Many of the VK3 stations often change over to 'phone now, and 3BD, 3BQ, 3YP, 3CP and 3OC have had a number of good D.X. 'phone contacts. 3MR is testing out a beam antenna, but although it apparently increases the strength of signals at D.X. ranges, no difference can be noticed on it locally. VK6AA is another who is testing out aeriels, and though his signals are always strong in Victoria, he has not done very well with D.X. yet.

Several new stations have been heard on 28 m.c. lately, and 3XP seems to be getting the best D.X. results of them. 3CX was active on 10 again after several years on the lower frequencies, and as he won a crystal in a recent 14 m.c. contest, will no doubt change over to C.C.

Interest in 56 m.c. field work is increasing again, and another field day is to be held on this band, for which special gear is being built by several of the Melbourne stations. Portables are again to be taken to the various hills around Melbourne in an attempt to work over larger distances than in the similar tests made last year. A prize will be allotted to the party obtaining the best results.

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# Improving Our High Frequency Receivers

By C. Woodward (VK3YO).

*The Autodyne.*—Much has been written about this famous type of receiver, both for and against, yet it still lives on, although the modern version is far removed from the "tuner" of 1924 or thereabouts. For years the keynote has been sensitivity, and more sensitivity, practically forgetting all else in the struggle.

Receivers with a marked degree of sensitivity and selectivity have been few and far between; the general result seems to have been either one or the other. Both these factors are necessary in the present-day scheme of things, and if we can build a receiver with both characteristics, and then increase either at will, we have achieved something of note.

Obviously more sensitivity is useful after the background noise level is reached, and amplifying a signal that is below the noise level will certainly not make it readable. A tuned R.F. amplifier will, of course, increase the sensitivity, but at the same time it will increase the background noise in proportion—perhaps even more so—as tube noise has also to be considered.

The sensitivity of a straight regenerative detector is at its highest on a weak signal, and falls off quickly as the signal increases in strength. Therefore, increasing the input to the detector by the addition of an R.F. amplifier will reduce the detector sensitivity, as the R.F. gain is brought into play, and so we see why an R.F. amplifier does not increase the strength of signals as much as we might expect. This sensitivity characteristic of regenerative detectors would be all right if not for the fact that the detector does not work properly on both strong and weak signals.

It is difficult to heterodyne a strong signal to get a beat note when a detector is working at maximum sensi-

tivity, as the frequency of oscillation has a tendency to run into line with that of the incoming signal. This gives us the peculiar situation of strong signals simply spreading over the dial, with a corresponding "wash-out" of all weaker signals near the same frequency; so that the tuned R.F. stage actually *decreases* the effective selectivity, instead of adding to it in the process of bringing the signals up to a fair strength. The selectivity we require in our T.R.F. receiver is such that we can tune to within about 20 K.C. of a strong local without interference.

We are, all of us, familiar with the type of "detector blocking," and the consequent annoying result of being unable to copy anything within 100 K.C. of the offending signal. However, this trouble can be overcome quite easily by inserting a gain control in the R.F. stage and reducing the gain until the detector does not block.

Reduction of the R.F. gain may be accomplished in various ways. Shortening the antenna cuts down the input, but is not a practicable solution. The old idea of putting a potentiometer between the aerial and earth terminals and adjusting the input by the variable arm has the big disadvantage in amateur receivers of bringing R.F. out on to the panel.

Owing to their variable  $\mu$  characteristics, tubes such as the 6D6 are ideally suited for a T.R.F. stage, because, with the gain control in the Cathode circuits, the grid bias can be varied with a corresponding variation in the amplification of the R.F. stage. Reducing the gain by this method definitely prevents detector blocking, and therefore proportionately increases the effective selectivity. The other main requirement in the Autodyne is *stability*.

## PUTTING THEORY INTO PRACTICE.

The three main points necessary for the efficient operation of the receiver are, namely:—

- (a) Sensitivity.
- (b) Selectivity.
- (c) Stability.

The first two are obtained in the T.R.F. stage, and stability comes from high C. circuits, an electron coupled detector, and sensible shielding.

The parallel condenser method of band spreading is one way of obtaining a high C. detector circuit. Regeneration controlled by a potentiometer in the screen lead of the detector will give a very smooth action.

By the use of a drum dial in the centre, the R.F. and detector circuits may be isolated in their respective shield boxes, and so help toward the elimination of interaction between stages.

A separate power supply is recommended, four wires only being necessary. These may be connected to the receiver by means of a four-pin plug. The placement of the parts under the chassis hardly needs comment, the main points being to have a common earth wire, and to keep R.F. leads as short as possible. The separating of the R.F. and detector circuits incurs a long plate lead to the R.F. stage, but by keeping it above the chassis and going directly through the sides of the shield boxes, no trouble should be encountered.

A tuned R.F. receiver incorporating these refinements is a definite advance on other types of T.R.F. sets, and the little extra time required to bring the receiver up to date will prove itself well spent.

## An Efficient 10 Meter Station

The main portion of VK2PN's activities have been directed towards the 10-metre band of recent months, with the result that a highly efficient transmitter has been constructed for that band. To those who know 28 m.c., it's no mean feat.

The transmitter is of the five-stage crystal variety, utilising the following tube line-up:—59-59-PP, TCO4/10's—PP 465—PP 800. Quite an array.

The first 59 is used as a Tritet oscillator, with its output on about 28.1 metres (Tripling from the 80 m.x. crystal); the second 59 is used as a Frequency Tripler to 28 m.c. These two tubes are fed from a 300V. pack, using an 82 as rectifier.

There are then two push-pull buffer stages, using firstly a pair of TCO4/10's, the second a pair of 46's, and the final stage is push-pull 800's, which are coupled to a rather novel antenna.

The antenna is to all intents and purposes a 67-foot Zepp, with 48-foot feeders, excepting that in the last 10 feet of feeders the spreaders are removed and the wire tied together (using insulated wire), and connected to the tuned tank in the normal way. The removal of the feeders means an increase of feeder current of 200 per cent. This effect is also noticeable on 80 metres.

The results with the above apparatus have been very pleasing, and all continents were contacted. OH7ND and 2PN keep a schedule every evening at 6.50 p.m. VK2PN is located at Tumut, N.S.W.

## ARE YOU A MEMBER?

Subscriptions to the W.I.A. (Victorian Division) are as under:—

Full Member, 20/-. Associate Member, 16/-

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Entrance Fee, 2/6

Write to Secretary, Law Court Chambers, 191 Queen St., City

## Divisional Notes

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### Divisional Addresses :-

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NEW SOUTH WALES	BOX 1734JJ, G.P.O., SYDNEY
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QUEENSLAND	BOX 1524V, G.P.O., BRISBANE
SOUTH AUSTRALIA	BOX 284D, G.P.O., ADELAIDE
WEST AUSTRALIA	62 SUBIACO ROAD, SUBIACO
TASMANIA	BOX 547E, G.P.O., HOBART

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### N.S.W. Division

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The higher subscriptions so far haven't frightened any of the lads away. The rise was really a necessity, and it allows things to be attempted that otherwise would be impossible.

The Exhibition is proving such a success. The only thing that was worrying the Council was the fact that they did not charge enough for the stalls.

Some ten trade firms will be exhibiting, and there is a promise to show off a lot of the latest gear imported from the States.

The complete prize list is as follows. The policy of the New South Wales Division has been always to pay for any prizes, etc., obtained from the trade. However, in this case, the prizes donated are as part payment on the value of the stall. The firms co-operating and prizes are as follow:-

**COMPETITIONS.**—To cater for the amateur transmitter and short-wave listener, a series of competitions has been arranged, and substantial prizes will be awarded.

There are two distinct series of competitions—(1) for affiliated clubs, (2) for amateurs in general.

**FIRST SECTION.**—Under the first section there are two competitions—

(a) "The Wireless Weekly Cup," to be awarded for the best stall exhibit of an affiliated club to the Institute;

(b) three prizes—£3/3/-, £2/2/-, £1/1/-—for the best pieces of apparatus contained on those stalls. The above prizes have been donated by "Wireless Weekly."

**SECOND SECTION.**—The second series comprises six sections—A to F. First, second and third prizes are awarded in each section; donor is mentioned in brackets after award.

(a) The most efficiently designed and correctly built multi-band transmitter—

1st — Philips' 50-watt Transmitting Penthode (Philips).

2nd — £5/5/- open order for Filter Condensers (Ducon Condenser Co.).

3rd — 801 Transmitting Valve ("The Bulletin").

(b) The most efficiently designed and correctly built amateur receiver—

1st—7 Radiotrons, to be selected (A.W.A. Valve Co.).

2nd — Ferranti Milliameter (Noyes Bros.).

3rd—Dual Wave Super Het. Kit (R.C.S. Radio).

- (c) The most compact and complete portable station—

1st — Transmitting Condenser (Colville Radio).

2nd—3 6P6 Transmitting Valves (A.W.A. Valve Co.).

3rd — 300 Mill. Filter Choke (R.C.S. Radio).

- (d) The best U.H.F. Receiver—

1st—2 Acorn Valves, 954 and 955, and a 6L7 (A.W.A. Valve Co.).

2nd—£2/2/- (J. Moyle, Esq., "Wireless Weekly").

3rd—£1/1/- (Mr. Sutton).

- (e) The best U.H.F. Transmitter—

1st—2 TCO3/5's (Phillips).

2nd—Hammarland Transmitting Condenser (J. B. Martin).

3rd—5-Metre R.F. Chokes and Interrupter Unit (R.C.S. Radio).

- (f) The best example of a piece of apparatus, excluding gear, could be exhibited in Sections A to E (would include Wave Meter, P.A., Monitor, Key, Mike, etc.)—

1st—Crystal Microphone (Price's Radio Service).

2nd—Line Filter (R.C.S. Radio).

3rd—4 Special R.F. Chokes (R.C.S. Radio).

It is necessary to include with each entry a description of the gear and points of merit and circuit design.

Points to be awarded for (a) design, (b) workmanship, (c) covering description.

The competitions are open to all members of the Institute and its affiliated clubs and to all other short-wave experimenter at the price of 2/6 per entry. Prior entries are not required, although anyone entering large transmitters should advise the Secretary to that effect.

Entries will be received from 10 a.m., Monday, till 6.30 p.m., Monday, 15th June.

## APRIL MEETING OF W.I.A.

VK2AS (Mr. Freeman, of the Amalgamated Wireless Valve Company), delivered an interesting lecture on "Method of Modulation," with special reference to the Suppressor Grid method. The lecture was received with the usual interest, and was much appreciated by those present.

The latter part of the meeting was spent discussing arrangements for the forthcoming Amateur and Short Wave Exhibition, to be run by this Institute from 15th June to the 20th, and to be held in the Lower Hall, Presbyterian Assembly Buildings, Wynyard-square.

Six thousand square feet of floor space is available. Full details appear in another place in this issue, or fuller information can be obtained from W. Ryan, Esq., the Secretary, New South Wales Division of the Wireless Institute of Australia, Box 1734JJ, G.P.O., Sydney.

R. Corthorn (VK2VG) has taken over the management of the official organ, "Amateur Radio," here in New South Wales, and can be reached at above box number. A special meeting is to be held shortly of the Exhibition Committee and club delegates to discuss the entrants for the "Wireless Weekly" Cup and cash prizes.

## NEWCASTLE CLUB NOTES (2RF).

### AFFILIATED WITH W.I.A.

Conditions patchy in April and May. 40 m.x. the usual din of R9 local cw. and fone. 20 m.x. with a good supply of North and South American fone and cw. 80 m.x. is rapidly coming into its own again, and 2ZC, R.F. and other locals will park their fone there soon.

2TY is now on with grid mod. fone, but very QRL and not a little QYL.

2ZC keeping quiet, but intends to be on fone a lot this winter.

2ZW on 20 m.x. with a self-excited 852. Wow! And doesn't he raise those Yanx, not to mention the VP5 he didn't hear. Hi!

Lionel (2CS) has built a special shack, and recently entertained the whole gang at a shack warming. Many and varied were the reminis-

cences that flowed when the oldtimers harked back to the good old days.

2RF has been indulging in an orgy of tube blowing, and has sworn off high-power modulation for good.

The latest D.X. Club Contest, for the Electronic Commission's cup, has just commenced, and at the end of the first week 2UF and 2MT were leading.

## LAKEMBA RADIO CLUB (VK2LR).

AFFILIATED WITH W.I.A.

(By 2DL.)

At the annual meeting of the above club, held at the club rooms, 334 Canterbury-road, Hurststone Park, on 28th April, the following were elected to hold office for the ensuing year:—President, Mr. J. Pinnell (2ZR); Vice-President, Mr. E. Hodgkins (2EH); Hon. Secretary, Mr. G. Brown; Treasurer, Mr. H. Ackling (2PX), unopposed; Publicity Manager, Mr. W. Phelps (2DL), unopposed; QSL Manager, Mr. L. Hughes (2QP), unopposed; Committee of three, Mr. J. Warren (2QX), Mr. I. Clarke (2IC) and Mr. T. O'Donnell (2OD); Social Committee, Mr. L. Myers (2KS), Mr. J. Warren (2QX) and Mr. W. Phelps (2DL); Auditors, Mr. J. Worrall (2XM) and Mr. J. Warren (2QX), both unopposed; W.I.A. Delegate, Mr. T. O'Donnell (2OD).

The sixth annual reunion of the club was held at the Donnybrook Hall, Canterbury, on Wednesday, 6th May. The Radio Inspector's Department was represented by Mr. W. T. S. Crawford (senior Radio Inspector) and Mr. J. Carroll (Assistant Radio Inspector). The W.I.A. (Federal) was represented by Mr. W. M. Moore (2HZ), and New South Wales by Mr. H. Peterson (2HP). Radio clubs represented were Waverley, Zero Beat, Manly and Hurstville. Mr. D. B. Knock represented the "Bulletin," while Mr. J. Moyle was to have represented "Wireless Weekly," but was detained at the last moment.

The newly-elected President (Mr. Pinnell) occupied the chair, and after the usual speeches and toasts the club cups were presented to the winners by Mr. Crawford. Mr. L. Myers (2KS) won both the "Chanex-Dulytic" Cup, for the VK-ZL Contest,

and the "Slade Cup," for the D.X. Contest. The winner of the Receiving Cup was Mr. G. Bower. The "booby" prize, in the form of another "cup," was won the second time in succession by Mr. H. Ackling (2PX). Mr. Crawford presented this trophy amid much amusement and cheering, and for some reason a recorded version of "the passing of the fruit" was emitted from the amplifier at the conclusion of Mr. Ackling's speech! Briefly, the whole function was an outstanding success, and great credit is due to the ladies who arranged the tables and catering. The club would also like to extend thanks to all those amateurs who co-operated with club members in the recent club contests.

WM. J. PHELPS.

## Victorian Division

### 'PHONE SECTION.

Activity in this section is as usual, all stations plodding along steadily. The April 'Phone Section meeting was very well attended. Such usually inconsistent members as J.R. and T.M. repeated last month's good performance by attending this meeting.

All active members except 3LU applied, as usual, for a frequency allocation. Everyone was very surprised to learn of 3LU's intention of discontinuing his excellent work on the 'Phone Section frequency band. Colin definitely states that he is not coming back on the band. So this, of course, means that he can't.

3HF was very anxious to obtain a morning session, in order to make a "job" of their late Saturday night transmission. This idea has now materialised, and Harry was heard recently remarking, at about 0955, that they had been on the air for 10 hours and were then closing down.

Quite a number of the 'Phone Gang are actively interested in another 'phone band, namely, that commonly known as the 5-Metre Band.

Such stations as CR, TH, FW, OY, HK, TM and DH have done some 'phone work on the U.H. frequencies. CR has been consistently on this band of late.

We have heard that 3RI has spent quite a sum of money on new modern equipment for the popular Railways Institute Wireless Club Station.

T.M. has shifted his gear to a new location—not far from the old one—but, however, he is now in Glenferrie-road, and we are treated to large quantities of local street noises with every announcement. Sounds like a busy area there, Bert.

3XL has built himself a new "all-wave" receiver, which, I believe, "waves" signals at him from all parts of the globe.

An appeal to the "gang"! Would they send any news of their doings or a description of anything new, novel or interesting to D.H.? Thank you!  
—73's (VK3DH).

## KEY SECTION NOTES.

(By VK3YO.)

Arrangements were made at the May meeting for a 56 m.c. field day, to be held on 7th June, between the hours of 1100 and 1600.

Thirty-one different stations have been arranged into 15 groups, and will be located at various points, extending from Geelong to Shepparton and from Mt. Macedon to Arthur's Seat.

Providing the enthusiasm holds, the day should be even more successful than the one held last September.

The results of the 20 and 10-Metre Contest, held on 26th April, were also given. The winners were:—13 m.c., VK3CX, 1,168 points. 28 m.c., VK3YP, 747 points.

3CX was presented with a crystal that was reputed to be active, and 3YP was the recipient of a little box containing some small round objects, which are popularly supposed to be very much more active than crystals.

3YP considers that if he uses his trophy in the appropriate manner he will be in the running for the next Stawell Gift.

3OC received the congratulations of the section on his impending marriage.

3RX has been receiving some very good reports from overseas on his 14

m.c. fone, and it is rumoured that 3MR and 3YP have been heard in Germany again!

## WESTERN DISTRICT NOTES.

(By 3HG.)

3CK is on 3.5 m.c. again, after a long absence. His sigs. sound like the same QRP rig and come in very strongly. 3X1 quiet after his recent burst on 3.5 'phone. 3WW active on 3.5 and 7 m.c., while 3JA, who recently moved permanently to his QRA in the bush, has not been heard on yet. Guess he is thinking of some way of providing a power supply. 3PG says he has worked over 50 countries with the same old 201a! 3XB is a school teacher up in the Mallee and about four miles from the VK5 border. He gets out well on 7 m.c., using B batteries on a B240 tube. 3JE will soon be leaving Coleraine, after nearly two years in the radio trade there. His 200-metre transmissions will be missed by the local BCL's. 3OW fairly quiet, except for schedules. 3HG using QRP and working only a few locals on 3.5 and 7 m.c. Recently had the bad luck to fracture a good crystal and to have several tubes go west. 3DW operates gear worth £3,000. He is talkie operator at Shepparton. 7 and 14 m.c. are just a mass of QRM during peak hours, through which it is practically impossible to work. 28 m.c. is falling off as the winter approaches, but some good D.X. is still coming through. 3.5 m.c. rather irregular, the best time being just around sunset.

## Queensland Division

If the past financial year can be taken as a criterion for the present one the Queensland Section of the W.I.A. seems to have a rosy time ahead. The year just ended marked a record for the section in strength of numbers, no less than 80 fully-paid-up members being on the books.

On renewal of subscriptions members will now derive two very definite benefits. Firstly, "Amateur Radio" will be included with the usual subscription amount; secondly, the new membership certificates which have come to hand will be issued. (Good news! Editor.)



At the last Council meeting arrangements were made to hold a novel 5-Metre Field Day in conjunction with the Windsor Boy Scouts. Tentative plans were also discussed for getting 4WI back on the air again.

Now for the news!

4HR, our one-time dyed-in-the-wool 56 mc. enthusiast, has turned D.X. crank. "Tibby" now spends all his time trying to add to his total of countries worked.

Ask 4OL about the QRM from the local pirate.

Ten metres has attracted 4RY. Bill recently landed a ZL, and is very hot after W.

One has to get out well on "ten" to run weekly skeds, yet 4GK does it successfully with VE5BI.

Judging by the QSL cards coming through for 4YL, Mandeline certainly knows her D.X.

VK4's leading contest man, 4BB, is having a well-earned spell.

What's happened to 4EI these days? If your receiver will cover the ten-metre band, the answer will be forthcoming. Roy is raising 'em all right, and works Europeans that are inaudible in Brisbane. Must be after that 28 m.c. cup, Roy?

4ZO's QRA seems to be a veritable paradise for hearing the 28 m.c. D.X. What about a monthly list, O.M.? It would make interesting dope in these notes.

Keep your eye on 4UR. Jack, I'ke VK2EO, is starting to pinch the p'ck of the 14 m.c. D.X. He looks I'ke being another strong member for the VK4 transmitting force.

4UU has given up D.X.ing in favour of dancing.

4NO, a newcomer on the air at Gladstone, recently spent an enjoyable fortnight in Brisbane. Most ham shacks were inspected by the visitor. Don't forget to give 4NO a shout, boys.

The QRP merchant from Ayr (4EI) is back in Brisbane again.

The plate of some poor 45 will soon be blushing.

4AP is in the throes of rebuilding crystal gate filters and a converter for 28 and 56 m.c. Have Alf. rather troubled.

4FB is at present holidaying in Tuwoomba.

4LE would like someone to build him an E.C. oscillator that actually works.

4UL seems to be getting out well, judging by some of the prefixes heard calling him.

4FE blankets out more than a few K.C. of the band with his fone.

When 4RC is on, it's hard to tell whether Bob's on 7, 14 or 28 m.c. Better harness the harmonics, O.M.

4CU and 4AF, both of Clifton, are on the 56 m.c. band in earnest, and wait skeds with other VK4's. What about co-operating, someone?

VK's who want an Aslan contact for W.B.E. are advised to look for VS6AH around midday. This interesting bit of dope comes from 4ZO.

It is rumoured that 4BB and 4AP are already planning what they will do to 2LZ's transmitter when they visit Sydney early next year. Better sell all the gear before Christmas, Con.!

4JF gets out well, but the boys never know about it unless they hear him working 'em.

This is addressed to country members only. What about some dope on yourselves, O.M's? The other VK's are just as interested in your doings as you are in theirs. Our traffic officer (4WT) is going stale for want of work, so pass the dope along to him if you are too lazy to write. You'll find 4WT on 7 m.c., and with an 852 (Queen Mary) in the final you should hear him R9 plus.

## South Australian Division

(By VK5KL.)

Transmitters' Section meeting on 29th April was well attended. Mr. Pearn, the new Chairman, presided, and called for one minute's silence in memory of the late Mr. Roberts

(5NR). Business was discussed, and Mr. Elliott (5RD) was welcomed back to the meeting after months of absence. Rules were read out re the cup donated by Mr. Harry Roberts (5MY), for work on 10 metres. All logs must be forwarded every three months for deciding who will hold the cup. Mr. Richardson (5YK) held the attention of all while he spoke on his experiences abroad during the war.

During Easter a party of six, with five-metre gear, attended the South Australian Outboard Motor Boat Centenary Speed Trials at Murray Bridge, and successfully did the timing. Please see article in this magazine for further reference.

All VK5 deeply mourn the death of Mr. Bill Roberts (VK5NR), who passed away on Saturday, 18th April.

A great loss to ham radio,

I'm sure, all will agree.

His memory will live for ever

In our minds and silent keys.

—VK5KL.

## AROUND THE HAMS.

Conditions on 20 m.x. F.B. for Yanks, afternoon and night. Early mornings O.K. for Europeans. Ten m.c. quiet; 40 same as usual.

5JC.—Still raises the Yanks on 20 m.c. fone. Heard him QSO seven one Saturday night. P.P. modulation is the secret.

5MK.—Skedding with a ZS; remarked his tubes flat. Few weeks later got note to call at Customs Office and pick up a RK20. Whew! What a gift!

5BJ.—Has built a five-metre super.

5WJ.—Haven't heard him, but believe on 80 m.x. fone.

5WG (Port Pirie).—Reports few QSO's on ten—VK6, 4, HJ3. DA4, 'SIH and Japs. Rebuilding rig again.

5HD.—Now proud owner of a three-tube Super.

5LP.—Heard on 40 m.x. with grid bias fone. F.B., Laurie!

5AP.—Has at last got going on five metres.

5FM.—Tried 5 m.x. over Easter. Heard remarking "it was a cow of a band." Perhaps you expected too much, Pete!

5KO (ex 5IH-3WL).—Renewed his licence, with a new call. Still active on 10 m.x., with 5ZC and 5LJ.

5RX (VK5's able QSL officer) finds time now and again to work some D.X.

5RE.—Is down in town at present.

5KD.—Our budding young copper. Been working some D.X. early a.m.

If VK3's want to see a card for IJ3AJH, they had better come to VK5. Several chaps here have one. My 10 m.x. QSO card with him arrived six weeks ago.

Notice.—All VK2-3 hams who may wish to try the possibility of QSO-ing on 5 m.x. with VK5, please drop a line to the following address:—C. H. Castle, 21 Harrington-street, Prospect, South Australia.

Well, chaps, not feeling too hot here. Old Man 'Flu has taken charge, so will QRT.

## Tasmanian Division

(By 7PA.)

The May meeting, held on the 5th inst., was an important one to all, as after general business the fate of the annual gathering had to be decided, and after hearing a report as to prospective visitors, in the persons of some northern members, it was the decision of those present that a dinner be held on the first Saturday in June at a place to be fixed after investigation. It is believed that at least six members will make the trip from Launceston, if other districts cannot manage it. This was confirmed by a letter read at the Council meeting on the 12th inst. The annual meeting

will be conducted in the club rooms prior to the dinner.

A party of southerners made a social call on the northerners during the week-end of April 25-26, and visited all those that time and circumstances permitted, and in all had a good trip and were very delighted with the hospitality.

Incidentally, I hear we have a lot of teetotallers in the gang. So Chummie says. Hi! He also says that 7JH plays a very scientific game of "Contact," and was a trier even though the winner had to shout. Too bad to have to pay for your show of skill, Jack, and just as well you don't go north every week-end!

Some northern news is available this round, for a change:—

7AB.—One of the most active Launcestonians, and seems to be a live wire.

7BQ.—As far as is known, devotes himself only to the B.C.L. entertaining.

7AM.—Gets his fair share of D.X. Don't happen to have any of those midget power chokes to spare. O.M. I suppose? Hi!

7CD.—Little heard of.

7CJ.—Also quiet. Possibly a silent worker.

7CK.—Hear you are planning a visit to VK2. Good luck and hope you have an enjoyable holiday.

7CP.—Too QRL with 7BU to put much time into ham radio, but is looking out for a bit of 200-metre operating again.

7LZ.—Has given up 200-metre transmissions owing to his QRA, but is still fairly active on the other bands.

7RC.—Has bigger things ahead, so rumour has it.

7RK.—Said to be anxious to QSO 7YL. Careful, O.M.!

7TY.—Commercial operating at Western Junction Aerodrome. Does his ham radio between times.

7XL.—Seems to have gone quiet, too.

There are also a couple of new additions to the ham list there that I am not at present detailed with, but offer congratulations and welcome, chaps.

The notes of a month or two ago have been the cause of a mild query from some of our northern brothers over my suggestion that we never heard of them unless or except when they wanted to growl. Sorry, chaps! No offence. Just a little overimaginative. Thought that you were so quiet that that would be the only chance we would ever have of hearing from you.

Here in the south:—

7YL.—Has been on the air and claimed a W5 as her first D.X., but has stripped the rig for a rebuild—rack, I believe, couldn't have been landing them fast enough, but it's bad judgment to be off during holidays, Joy. Should time it better than that.

7CL.—Our latest addition. Is doing his bit, getting on to the D.X., and now using crystal and putting out an F.B. signal on 20.

7JB.—Popped it over the lads. Made a sked with 7YL for her first QSO. He is very QRL, too. Has several hundred QSL cards to get out after the contest.

7CS and 7CW.—Heard occasionally on 200 metres.

7KV.—A very busy man. Takes an hour or more to do his round after work nowadays, so I hear.

7JH.—Working a good bit on 20 metres lately.

7PA.—Fairly active between times. Uses both 20 and 40 bands; also regular 200 metres on Sundays.

7IJ.—Not seen often, but carries on quietly as usual, and gives a 200-metre session on Sunday afternoons.

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V3 A

## R.A.A.F. Wireless Reserve Notes

Federal Notes by the O/C.

(1A1-VK3ML).

The Reserve was called upon to render service to the Air Force on two occasions since the publication of last month's notes. Firstly, there was the case of the four Demons sent to attend the official opening of the Renmark (S.A.) aerodrome. An early opportunity to show what he could do was given to the recently-enrolled member at Mildura. 3F5 did a fine job of work in supplying weather reports and notes on the condition of the local aerodrome. Other western VMC stations co-operated as well, together with 5Z1 and 5A1. It is getting hard for a pilot to leave the ground anywhere now without having a weather report presented to him before opening the throttle!

The second effort is one that has just recently commenced. Two Wapitis are proceeding to Central Australia for duty, and will be absent from the base for some time. This provides an excellent opportunity for VMF and VME stations to help in the relay of traffic from Central Australia.

New ideas in the training of recruits have been put into operation in VMB and VMC. They provide for a training section under the command of a qualified instructor, whose sole duties are to bring new members up to a definite standard in a certain period. Consequently a section will not be burdened by having to put up with a raw recruit, who would naturally hamper general sectional progress. Victoria and New South Wales each have a full training section, and the scheme will be instigated in other districts when occasions demand.

### 3rd DISTRICT NOTES.

(By VK3UK-3Z1.)

We are right in the thick of a new reorganisation scheme, which we feel certain will solve the last of our difficulties. Sections are being modified and a new training section com-

menced. In future no man will go into one of our main sections until the instructor of our Training Section has passed him as efficient. Our main sections will have instructors looking after their procedure; also thus the section leaders will be able to concentrate all their attentions to the numerous matters incidental to running a section.

3A3.—Did a great job in connection with the recent flight to Renmark.

3A6.—Has now fully recovered from his illness, and is back on the air again.

3B1.—Is on his last country trip for some time. We were able to contact him on schedule from Merbein recently. He will be one of our metropolitan stations again shortly.

3B3.—Had the misfortune to blow all the tubes in his new receiver on schedule last week. Our sympathy, Allan!

3B4.—Is, unfortunately, laid up with an attack of 'flu.

3C2.—Is doing a great job as S/L VMC3.

3C3.—Paid a flying visit to the city last week, and we were able to have a long discussion on Reserve matters.

3C4.—Is a very, very busy man. He has just moved into his new house. We can see a job of pole erecting for the boys very shortly.

3C5.—Was well on the job during the recent flight. As we were copying his T9-R9 signals on the first morning of the flight, we wondered how on earth we ever had difficulty in making contact when he first joined.

3C6.—Is very busy organising the next five-metre field day.

3D2.—Is having bad power-supply troubles, and is investigating the best ways and means of overcoming the difficulty.

3D3.—Is hard at work on a new portable for Reserve work. If the "works" are as good a job as the case, it will be an outstanding outfit.

3D4.—Is off the air pending the finishing of his new shack. It sounds quite strange not hearing the old, reliable 3D4 signal in the VMC4 roll call.

3D5.—Has been having trouble with his crystals.

3D6.—Is back on the air again. It seems like old times to hear that signal again. Her enthusiasm is undiminished, apparently, as she stood by during the days of the flight from 1,000 hours till well after 1,700 hours.

3E1.—Has been down in the city for some little time, and it is possible we will have him here permanently.

3E2.—Paid us a visit early this month. Unfortunately, he had to return to his home the day after 3Z1 returned from holidays, so we hadn't much chance to talk over Reserve matters.

At our metropolitan stations' meeting this month we discussed the details of the new scheme at some length, and also had the pleasure of having 1A1 along and receive his ideas and criticisms as well. Our meeting this coming month will be a big one, as we have two very important items of business to put through. More of that next month.

## 5th DISTRICT RESERVE NOTES.

(By 5Z1-5SU.)

VME has been a very active district during the month. One district watch and one and two section watches have been held each week. In addition, 5A2 and 5Z1 hold several morning watches each week with 1A1. 5A1, 5A2, 5A3, 5A5, 5B1, 5B4 and 5Z1 are all active, and the message totals are reaching very substantial figures. 5A2, 5A3 and 5Z1 all kept watches during the search for the missing Dragon Rapide, but VME was unable to give as much co-operation as it would have liked during the Renark flight. This flight took place during the day, and we were able to arrange for stations to keep watch. 5A2 is acting as relay station between

Federal Guard Station and the Sixth District.

Dual wave broadcasts are being given on 3900 k.c. and 7317 k.c. by 5Z1 at district watches on Friday nights, and it seems probable that this practice will have to be extended to include section watches.

Section members are being encouraged to construct portable equipment, and some results should be apparent shortly.

Message totals:—April: 5A2-62, 15/4 to 15/5: 5A1-48, 5A3-36, 5A5-11; 5B1-5, 5B4-11, 5Z1-88.

## N.S.W. 28 M.C. NOTES.

(By VK2BX.)

Nothing very sensational happened during the past month on 28 m.c. (for a wonder), and the approach of winter has affected the conditions for D.X. slightly. The signals from U.S.A. were not very strong and were hard to QSO. Those stations who are known to be using beam antennas certainly seem to put through a far better signal than the rest.

The ZL's seem to be always R7/8 now, and come through at all hours during daylight. The J's also come in very well. The South Africans seem to put through the best D.X. signals in VIS at present, and ZS1H seems to pound through under all sorts of conditions. ZT6K is also very loud, but his signal is very unstable and chirps badly, making it a hard job to read him. On 10th May, at 1342, our old friend, FB8AB, was heard calling test 10. He was R7 QSA4, and sounded exactly the same as on 14 m.c., with that characteristic wobble or ripple in his signal.

The local gang on 10 in Sydney have been very quiet. 2LZ has been building a new super which goes down to 56 m.c. O.K. Con. recently heard the harmonic of TDC on 56 m.c., using this receiver. VK2WJ and VK2XM are two new 28 m.c. stations in Sydney, and both put out FB T9X signals. Guess the good conditions on 14 m.c. QRM the 28 m.c. activity!

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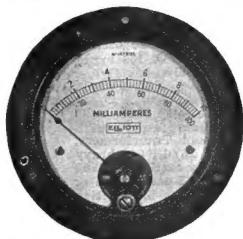
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